Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Diagnostic imaging: percentage of screenings for lung cancer interpreted as positive (Lung-RADS Category 3 or 4).

Source(s)

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: User-enrollee Health State

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of screenings for lung cancer interpreted as positive (Lung Imaging Reporting and Data System [Lung-RADS] category 3 or 4).

Rationale

Lung cancer is the leading cause of cancer for both men and women, with more than 156,000 patients dying from lung cancer each year in the United States, a figure that is greater than the mortality rates of breast, prostate, and colon cancer combined. Furthermore, lung cancer is the leading cause of cancer death in every racial and ethnic subgroup, and is the leading cancer killer of women, taking more lives than breast and every gynecological cancer combined.

Lung cancer screening (LCS) with low dose computed tomography (LDCT) is the only procedure proven to reduce lung cancer mortality in individuals at high-risk for lung cancer, and does so cost effectively. A clinical practice registry is essential to ensure that screening is performed in general clinical practice at a

high level of quality that can replicate the results found in research without undue risk. The measures included in the registry monitor cancer detection rate and positive predictive value to guide physicians towards low false positive rates and screening of the appropriate population, and radiation dose indices to ensure that radiation exposure to this screening population is no higher than necessary. Measures related to imaging interpretation are based on Lung Imaging Reporting and Data System (Lung-RADS), a set of structured assessment categories for reporting on lung cancer screening.

Abnormal interpretation rate or recall rate is a useful approximation of one type of false-positive outcome (recall at screening, not necessarily leading to biopsy). A high recall rate results in the patient potentially receiving unnecessary follow up imaging and biopsy.

Evidence for Rationale

American Association of Physicists in Medicine (AAPM). Lung cancer screening CT protocols, version 3.0. Alexandria (VA): American Association of Physicists in Medicine (AAPM); 2015 Jul 3. 15 p.

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Black WC, Gareen IF, Soneji SS, Sicks JD, Keeler EB, Aberle DR, Naeim A, Church TR, Silvestri GA, Gorelick J, Gatsonis C, National Lung Screening Trial Research Team. Cost-effectiveness of CT screening in the National Lung Screening Trial. N Engl J Med. 2014 Nov 6;371(19):1793-802. PubMed

McKee BJ, Regis SM, McKee AB, Flacke S, Wald C. Performance of ACR Lung-RADS in a clinical CT lung screening program. J Am Coll Radiol. 2015 Mar;12(3):273-6. PubMed

National Lung Screening Trial Research Team, Aberle DR, Adams AM, Berg CD, Black WC, Clapp JD, Fagerstrom RM, Gareen IF, Gatsonis C, Marcus PM, Sicks JD. Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med. 2011 Aug 4;365(5):395-409. PubMed

Pinsky PF, Gierada DS, Hocking W, Patz EF, Kramer BS. National lung screening trial findings by age: Medicare-eligible versus under-65 population. Ann Intern Med. 2014 Nov 4;161(9):627-33. PubMed

Primary Health Components

Lung cancer screening; computed tomography (CT); Lung Imaging Reporting and Data System (Lung-RADS); abnormal interpretation

Denominator Description

Number of screening exams

Numerator Description

Number of screening exams with a Lung Imaging Reporting and Data System (Lung-RADS) assessment category of 3 or 4

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

The measures in this set are being made available without any prior formal testing. However, these measures are included in the Centers for Medicare and Medicaid Services (CMS) approved American College of Radiology (ACR) National Radiology Data Registry, a CMS Physician Quality Reporting System (PQRS) Qualified Clinical Data Registry since 2014.

The ACR recognizes the importance of thorough testing all of its measures and encourages ongoing robust testing of the ACR National Radiology Data Registry measurement set for feasibility and reliability by organizations or individuals positioned to do so. The ACR will welcome the opportunity to promote such testing of these measures and to ensure that any results available from testing are used to refine the measures on an ongoing basis. Since these measures are in use for quality improvement and reporting, we can support data analysis of registry data to perform the testing, such as evaluation of gaps for validity testing, and signal-to-noise estimation for reliability testing.

Evidence for Extent of Measure Testing

Blakey A. (Administrator, Quality Management Programs, American College of Radiology, Reston, VA). Personal communication. 2016 Mar 7. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Inpatient

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Unspecified

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Not within an IOM Domain

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Number of screening exams

Exclusions
None

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Number of screening exams with a Lung Imaging Reporting and Data System (Lung-RADS) assessment category of 3 or 4

Exclusions
Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Registry data

Type of Health State

Clinically Diagnosed Condition

Instruments Used and/or Associated with the Measure

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Does not apply to this measure (i.e., there is no pre-defined preference for the measure score)

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Lung cancer screening abnormal interpretation rate.

Measure Collection Name

National Radiology Data Registry Measurement Set

Submitter

American College of Radiology - Medical Specialty Society

Developer

American College of Radiology - Medical Specialty Society

Funding Source(s)

None

Composition of the Group that Developed the Measure

The American College of Radiology (ACR) National Radiology Data Registry (NRDR) helps facilities benchmark outcomes and process-of-care measures and to develop quality improvement programs. The composition of the workgroup is has representation from each of our six data registries:

> CT Colonography Registry Committee (CTC)
> Dose Index Registry Committee (DIR)
> General Radiology Improvement Database Committee (GRID)
> National Mammography Database Committee (NMD)
> Lung Cancer Screening Registry Committee (LCSR)
> IR & INR Registries (Interventional Radiology)

Committee Members

> Morin Richard, PhD, FACR, Chair of NRDR
> Kalpana Kanal, PhD, Chair of DIR
> Zuley Margarita, MD, Chair of NMD
> Abe Dachman, MD, Chair of CTC Committee
> Frank Rybicki, MD, Chair of Metrics Committee
> Siegel Eliot, MD, RSNA Liaison
> Chad Calendine, MD, Co-Chair of GRID
> Geoffrey Wiot, Co-Chair of GRID
> Jeremy Durack, Chair of IR Registry Committee
> Ella Kazerooni, Co-Chair of Lung-Cancer Screening Committee
> Deni Aberle, Co-Chair of Lung-Cancer Screening Committee

Committee Staff

> Judy Burleson, MHSA, American College of Radiology
> Mythreyi Bhargavan Chatfield, PhD, American College of Radiology

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Mar

Measure Maintenance

This measure is reviewed annually

Date of Next Anticipated Revision

2017 Mar

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in March 2017.

Measure Availability

Source available from the American College of Radiology (ACR) Web site [   ].

For more information, contact ACR at 1891 Preston White Drive, Reston, VA 20191; Phone: 703-648-8900; E-mail: nrdr@acr.org; Web site: www.acr.org [   ].

NQMC Status

This NQMC measure summary was completed by ECRI Institute on December 11, 2015. The information was verified by the measure developer on March 7, 2016.

The information was reaffirmed by the measure developer on March 3, 3017.

Copyright Statement

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

Production

Source(s)

American College of Radiology (ACR). National Radiology Data Registry: qualified clinical data registry. Non-PQRS measures. Reston (VA): American College of Radiology (ACR); 2015 Mar. 49 p.

Disclaimer

NQMC Disclaimer